

Medicine Lodge Creek

Medicine Lodge Creek TMDL Implementation

Work funded through the 319 NPS Program is treating 35 miles of streams within the Medicine Lodge Subbasin (Figure 1), including Medicine Lodge Creek, Irving Creek, Fritz Creek and Edie Creek. Work on all of these 303d-listed stream segments will take four to five years with a grant amount of \$783,326. This project requires cooperation between the Clark Soil Conservation District, the Natural Resources Conservation Service, the Idaho Association of Soil Conservation Districts, the Soil Conservation Commission, the Idaho Department of Agriculture, the Idaho Department of Environmental Quality, and local landowners.



FIGURE 1
Location Map for Medicine Lodge Creek TMDL Implementation Project



FIGURE 2 The success of this program depended heavily on convincing local ranchers and landowners that State and federal agencies would work with them to improve water quality without negatively impacting ranching operations.



FIGURE 3 Problems that are routinely found along Medicine Lodge Creek include unstable, steep stream banks caused by improper grazing techniques. This problem has been exacerbated by unusual weather patterns over recent years.



FIGURE 4 One solution to bank erosion is to carefully place rip-rap and woody vegetation at the toe of the bank. With time, this bank will become completely vegetated and stabilized.

Another common problem along Medicine Lodge Creek is that confined animal feeding operations (CAFOs) have historically been placed in and adjacent to streams in order to provide water for livestock. The CAFO seen in Photo 4 used to be located in Irving Creek. This facility was recently relocated away from Irving Creek and now has water piped into it.



FIGURE 5 *Confined Animal Feeding Operation relocated away from Irving Creek*

Adjacent to the 35 miles of stream length being treated, there are more than 1,527 acres of riparian area to be treated. The Best Management Practices (BMPs) being implemented in these areas include prescribed grazing systems, corral systems, water gaps, hardened crossings, exclusionary fencing, vegetation revetments, clump plantings, rock V-weirs, and stable concrete irrigation diversions.



FIGURE 6 *Vertical slopes from overgrazing were knocked down. Rip-rap and willows were added to stabilize the bank. This looks unsightly now but will appear quite natural after one or two growing seasons. The biodegradable silt fencing will break down.*



FIGURE 7 *The stream bank in the foreground has been re-sloped, stabilized with rip-rap, and replanted. The vertical stream bank in the background has not yet been rehabilitated.*



FIGURE 8 *Willows were planted as horizontal bundles and as transplanted rooted clumps. All woody plants are locally derived. Many of the vertical banks were stabilized at their toe with large rocks and woody plants. The upper bank will slough back until stabilization is naturally achieved. Vegetation will then continue to establish itself naturally.*



FIGURE 9 *One very effective method for planting willows involves the use of a water jet. This high-pressure water injection technique allows the willow cuttings to be quickly and easily planted several feet deep along the bank and within the water table.*



FIGURE 10 A

These willow cuttings were planted with the assistance of water jet injection. Each vegetative revetment consists of several large trees, carefully embedded along the stream banks, to create a slower moving stream velocity where previously faster moving water was causing erosion. By cutting select trees on nearby forest service land, an additional benefit is gained: thinning the trees and reducing the fire danger in the adjacent forest.



FIGURE 10 B

Willow cuttings from a broader perspective.

All of these BMPs are being applied with the ultimate goal of restoring coldwater aquatic life and beneficial uses on 35 miles of stream bank along Medicine Lodge Creek. This goal is achieved by reducing stream bank and stream channel erosion; improving grazing management with planned grazing, pasture or exclusion fencing; decreasing sediment, nutrient and bacteria concentrations; reducing livestock concentration with off stream water developments; buffering streams with grass, shrubs and trees; and stabilizing eroding streambanks and channels using stream re-naturalization techniques.



FIGURE 11 *Within several years, all of the areas shown in the previous photographs will look as good and function as well as this section that was completed just two years ago.*



FIGURE 12 *These are some of the members of the Basin Area Group (BAG) that supported the Medicine Lodge Creek project. Lloyd Bradshaw (second from right) is the project manager.*